CLAIMS

What is claimed is:

1. A composition comprising an isolated polynucleotide encoding a protein having IL-1-R intracellular ligand protein activity.

2. The composition of claim 1 wherein said polynucleotide is selected from the group consisting of:

   (a) a polynucleotide comprising the nucleotide sequence of SEQ ID NO:1 from nucleotide 2 to nucleotide 529;

   (b) a polynucleotide comprising a fragment of the nucleotide sequence of SEQ ID NO:1, which encodes a protein having IL-1-R intracellular ligand protein activity;

   (c) a polynucleotide encoding an IL-1-R intracellular ligand protein comprising the amino acid sequence of SEQ ID NO:2;

   (d) a polynucleotide encoding an IL-1-R intracellular ligand protein comprising a fragment of the amino acid sequence of SEQ ID NO:2 and having IL-1-R intracellular ligand protein activity; and

   (e) a polynucleotide capable of hybridizing under stringent conditions to any one of the polynucleotides specified in (a)-(d), which encodes a protein having IL-1-R intracellular ligand protein activity.

3. The composition of claim 1 wherein said polynucleotide sequence is selected from the group consisting of:

   (a) a polynucleotide comprising the nucleotide sequence of SEQ ID NO:3 from nucleotide 2 to nucleotide 961;

   (b) a polynucleotide comprising a fragment of the nucleotide sequence of SEQ ID NO:3, which encodes a protein having IL-1-R intracellular ligand protein activity;

   (c) a polynucleotide encoding an IL-1-R intracellular ligand protein comprising the amino acid sequence of SEQ ID NO:4;

(d) a polynucleotide encoding an IL-1-R intracellular ligand protein comprising a fragment of the amino acid sequence of SEQ ID NO:4 and having IL-1-R intracellular ligand protein activity; and

(e) a polynucleotide capable of hybridizing under stringent conditions to any one of the polynucleotides specified in (a)-(d), which encodes a protein having IL-1-R intracellular ligand protein activity.

4. The composition of claim 1 wherein said polynucleotide is selected from the group consisting of:

(a) a polynucleotide comprising the nucleotide sequence of SEQ ID NO:5 from nucleotide 2 to nucleotide 754;

(b) a polynucleotide comprising a fragment of the nucleotide sequence of SEQ ID NO:5, which encodes a protein having IL-1-R intracellular ligand protein activity;

(c) a polynucleotide encoding an IL-1-R intracellular ligand protein comprising the amino acid sequence of SEQ ID NO:6;

(d) a polynucleotide encoding an IL-1-R intracellular ligand protein comprising a fragment of the amino acid sequence of SEQ ID NO:6 and having IL-1-R intracellular ligand protein activity; and

(e) a polynucleotide capable of hybridizing under stringent conditions to any one of the polynucleotides specified in (a)-(d), which encodes a protein having IL-1-R intracellular ligand protein activity.

5. A composition comprising a protein having IL-1-R intracellular ligand protein activity.

6. The composition of claim 5 wherein said protein comprises an amino acid sequence selected from the group consisting of:

(a) the amino acid sequence of SEQ ID NO:2; and

(b) fragments of the amino acid sequence of SEQ ID NO:2;

said protein being substantially free from other mammalian proteins.

7. The composition of claim 5 wherein said protein comprises an amino acid sequence selected from the group consisting of:

(a) the amino acid sequence of SEQ ID NO:4; and

(b) fragments of the amino acid sequence of SEQ ID NO:4;

said protein being substantially free from other mammalian proteins.

8. The composition of claim 5 wherein said protein comprises an amino acid sequence selected from the group consisting of:

(a) the amino acid sequence of SEQ ID NO:6; and

(b) fragments of the amino acid sequence of SEQ ID NO:6;

said protein being substantially free from other mammalian proteins.

9. A composition of claim 1 wherein said polynucleotide is operably linked to an expression control sequence.

10. A host cell transformed with a composition of claim 9.

11. The host cell of claim 10, wherein said cell is a mammalian cell.

12. A process for producing an IL-1-R intracellular ligand protein, which comprises:

(a) growing a culture of the host cell of claim 10 in a suitable culture medium; and

(b) purifying the IL-1-R intracellular ligand protein from the culture.

13. A method of identifying an inhibitor of IL-1-R intracellular domain binding which comprises:

(a) combining an IL-1-R intracellular domain protein with a composition of claim 5, said combination forming a first binding mixture;

(b) measuring the amount of binding between the IL-1-R intracellular domain protein and the IL-1-R intracellular ligand protein in the first binding mixture;

(c) combining a compound with the IL-1-R intracellular domain protein and an IL-1-R intracellular ligand protein to form a second binding mixture;

(d) measuring the amount of binding in the second binding mixture; and

(e) comparing the amount of binding in the first binding mixture with the amount of binding in the second binding mixture;

wherein the compound is capable of inhibiting IL-1-R intracellular domain binding when a decrease in the amount of binding of the second binding mixture occurs.

14. The method of claim 13 wherein said IL-1-R intracellular ligand protein comprises an amino acid sequence selected from the group consisting of:

(a) the amino acid sequence of SEQ ID NO:2;

(b) fragments of the amino acid sequence of SEQ ID NO:2;

(c) the amino acid sequence of SEQ ID NO:4;

(d) fragments of the amino acid sequence of SEQ ID NO:4;

(e) the amino acid sequence of SEQ ID NO:6;

(f) fragments of the amino acid sequence of SEQ ID NO:6;

(g) the amino acid sequence of SEQ ID NO:7; and

(h) fragments of the amino acid sequence of SEQ ID NO:7.

15. A method of identifying an inhibitor of IL-1-R intracellular domain binding which comprises:

(a) transforming a cell with a first polynucleotide encoding an IL-1-R intracellular domain protein, a second polynucleotide encoding an IL-1-R intracellular ligand protein, and at least one reporter gene, wherein the expression of the reporter gene is regulated by the binding of the IL-1-R intracellular ligand protein encoded by the second polynucleotide to the IL-1-R intracellular domain protein encoded by the first polynucleotide;

(b) growing the cell in the presence of and in the absence of a compound; and

(c) comparing the degree of expression of the reporter gene in the presence of and in the absence of the compound;

wherein the compound is capable of inhibiting IL-1-R intracellular domain binding when a decrease in the degree of expression of the reporter gene occurs.

16. The method of claim 15 wherein the second polynucleotide is selected from the group consisting of:

(a) a polynucleotide comprising the nucleotide sequence of SEQ ID NO:1 from nucleotide 2 to nucleotide 529;

(b) a polynucleotide comprising a fragment of the nucleotide sequence of SEQ ID NO:1, which encodes a protein having IL-1-R intracellular ligand protein activity;

(c) a polynucleotide encoding an IL-1-R intracellular ligand protein comprising the amino acid sequence of SEQ ID NO:2;

(d) a polynucleotide encoding an IL-1-R intracellular ligand protein comprising a fragment of the amino acid sequence of SEQ ID NO:2 and having IL-1-R intracellular ligand protein activity;

(e) a polynucleotide comprising the nucleotide sequence of SEQ ID NO:3 from nucleotide 2 to nucleotide 961;

(f) a polynucleotide comprising a fragment of the nucleotide sequence of SEQ ID NO:3, which encodes a protein having IL-1-R intracellular ligand protein activity;

(g) a polynucleotide encoding an IL-1-R intracellular ligand protein comprising the amino acid sequence of SEQ ID NO:4;

(h) a polynucleotide encoding an IL-1-R intracellular ligand protein comprising a fragment of the amino acid sequence of SEQ ID NO:4 and having IL-1-R intracellular ligand protein activity;

(i) a polynucleotide comprising the nucleotide sequence of SEQ ID NO:5 from nucleotide 2 to nucleotide 754;

(j) a polynucleotide comprising a fragment of the nucleotide sequence of SEQ ID NO:5, which encodes a protein having IL-1-R intracellular ligand protein activity;

(k) a polynucleotide encoding an IL-1-R intracellular ligand protein comprising the amino acid sequence of SEQ ID NO:6;

(l) a polynucleotide encoding an IL-1-R intracellular ligand protein comprising a fragment of the amino acid sequence of SEQ ID NO:6 and having IL-1-R intracellular ligand protein activity;

(m) a polynucleotide encoding an IL-1-R intracellular ligand protein comprising the amino acid sequence of SEQ ID NO:7;

(n) a polynucleotide encoding an IL-1-R intracellular ligand protein comprising a fragment of the amino acid sequence of SEQ ID NO:7 and having IL-1-R intracellular ligand protein activity; and

(o) a polynucleotide capable of hybridizing under stringent conditions to any one of the polynucleotides specified in (a)-(n), which encodes a protein having IL-1-R intracellular ligand protein activity.

17. A composition comprising an antibody which specifically reacts with the IL-1-R intracellular ligand protein of claim 5.

18. The composition of claim 5, further comprising a pharmaceutically acceptable carrier.

19. A method of preventing or ameliorating an inflammatory condition which comprises administering a therapeutically effective amount of a composition of claim 18.

20. A method of inhibiting IL-1-R intracellular domain binding comprising administering a therapeutically effective amount of a composition of claim 18.

21. IL-1-R intracellular ligand protein produced according to the method of claim 12.

22. A composition comprising an inhibitor identified according to the method of claim 15.

23. The composition of claim 22 further comprising a pharmaceutically acceptable carrier.

24. A method of preventing or ameliorating an inflammatory condition comprising administering to a mammalian subject a therapeutically effective amount of the composition of claim 23.

25. A method of inhibiting IL-1-R intracellular domain binding comprising administering to a mammalian subject a therapeutically effective amount of the composition of claim 23.